MCI Readiness

A Response Strategy for All Incidents

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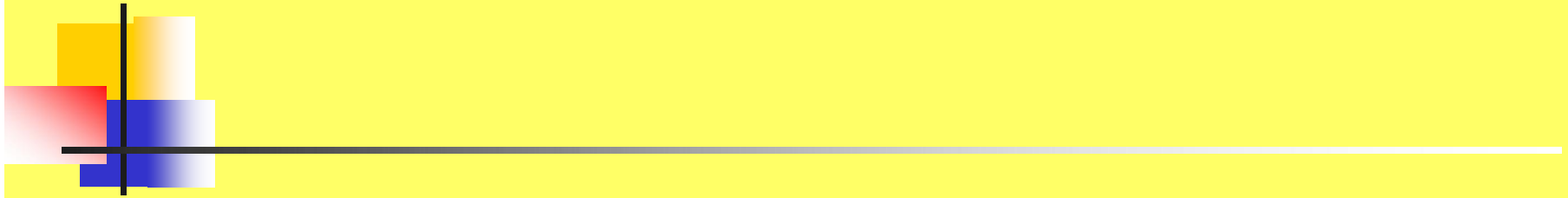
Overview

- What is a successful MCI response
- What does “Readiness” mean
  - On Individual, Department and System Level
- Critical Thinking during an MCI
- Incident Command system
- Developing a plan
- National challenges

Understanding MCI's

- Not routine events - chaotic
- Very intense, challenging, risky
- Require entirely separate set of skills
- Few opportunities to gain experience
- Often repeat same mistakes over and over
- High impact – low frequency



Think about an MCI or a major call you have been on where things went well !

Reasons for Success

Some things we control …

- Information / communications
- Command and control – scene well coordinated
- Shared assumptions / protocols
- Cooperation between all parties / jurisdictions
- Roles understood and followed

Reasons for Success

- Patients: prompt extrication, triage, transport
  - if delayed, managed with adequate staff / supplies
- Hospitals alerted / ready for patients
- Pre-planning and training
- Resources adequate – equipment worked
- Deaths / injuries prevented or minimized

… and no injuries to rescuers

Reasons for Success

Some things we don't control …

- Complexity - single or multiple events
- Scene access / geography
- Environment conditions
- Time of day, shift change, rush hour
- Critical systems remain intact

The "worst case" didn't happen and we got "lucky".

Definition

Multiple Casualty Incidents

- Incidents involving multiple victims that can be managed, with heightened response (including mutual aid, if necessary), by a single EMS agency or system.
  - typically do not overwhelm the hospital capabilities of a jurisdiction and/or region, but may exceed the capabilities of one or more hospitals within a locality.
  - usually a short, intense peak demand for health and medical services

Definition

Mass Casualty Incidents

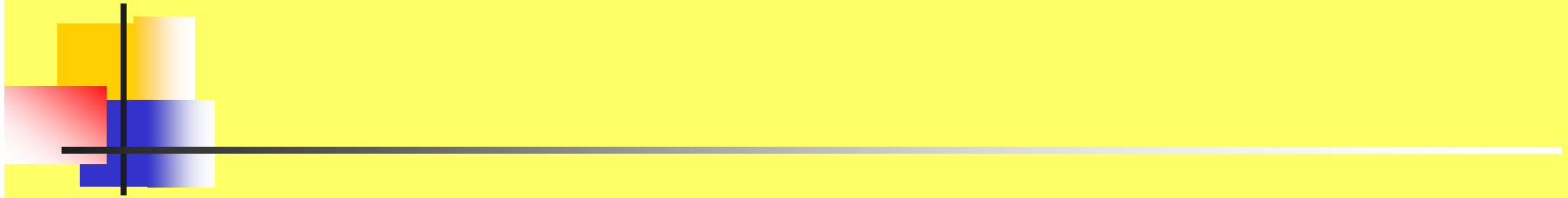
- Man-made or natural caused incidents resulting in illness or injuries that exceed or overwhelm EMS and hospital capabilities of a locality, jurisdiction, or region.
  - … likely to impose a sustained demand for health and medical services rather than the short, intense peak demand for these services typical of multiple casualty incidents.

Variety of MCI Approaches

Israel: flood scene with ambulances, immediate transport of critical (avg 36 mins.) everyone moved in 1 hr – hospitals do the coordinating/treating

Greg Friese, MS, NREMT-P **Principles of Mass Casualty: Response to Terrorist Attacks**

England: EMS often establishes extensive medical triage / treatment at scene, may bring additional medical staff to scene, coordination from scene – much longer transport times



According to Chaim Rafalowski, manager of Emergency Management Department of Magen David Adom (ADM) in Tel Aviv

Chaos is to be expected, not managed.
EMS command needs to focus on identification and rapid evacuation of critical patients.

Principles of Mass Casualty: Response to Terrorist Attacks
Greg Friese, MS. EMT-B

Responding to an MCI

Response Sequence

- First unit on scene
  - Notifies dispatch
  - Sizes up the scene
  - Establishes command
  - Reports number of patients
- Incident Commander requests additional help or resources
- Sort victims according to their injuries - Triage
- Stabilize those who are salvageable - Treatment
- Transport patients to the appropriate medical facility as quickly and safely as possible
- Transfer care to receiving hospital with appropriate patient reports
- Resupply and return to service ASAP

A Key Concept

Response coordination – not patient care – is key to saving lives and reducing injuries during an MCI.

MCI Readiness
What Does it Mean?

Preparedness

Always striving to improve your capability to respond to challenging incidents that are likely to, or may, occur.

- Individual Level
- Department Level
- System level

Individual Response to MCI's

- Scene size-up priorities as typically taught:
  - My self
  - My partner
  - My ambulance / equipment / public / community
  - My patient

- Then what?
  - How does one decide the best course of action in the midst of a chaotic scene?

Critical Thinking!

Time for Critical Thinking

I.D.E.A.L.S.

- **I**dentify the problem
- **D**efine the context
- **E**numerate choices
- **A**nalyze options
- **L**ist reasons explicitly
- **S**elf-correct

Critical Thinking:What It Is and Why It Counts
Peter A. Facione

MCI: Time for Critical Thinking

I.D.E.A.L.S

- **I**dentify the problem— "What's the real question we're facing here?"
- **D**efine the context. — "What are the facts and circumstances that frame this problem?"
- **E**numerate choices. — "What are our most plausible three or four options?"
- **A**nalyze options. — "What is our best course of action, all things considered?"
- **L**ist reasons explicitly. — "Exactly why we are making this choice rather than another?"
- **Self-correct.** — "Okay, let's look at it again. What did we miss?"

Critical Thinking:What It Is and Why It Counts
Peter A. Facione

Critical Thinking in a Nutshell …

- Identify / Define the Problem
- Analyze Options – Chose best action
- Re-examine / Revise Conclusions

Audio: I35W- NE Division

Challenge: Ambulances not getting to patients

- **Identify / Define Problem:**
  - Wait for ambulances – or use pickups?
  - Can ambulances meet the pickups – or drive to ER?
  - Crews not getting to Dirk's location
  - No one in charge at North Staging
- **Analyze Options / Chose Best Action:**
  - Credibility of information
  - Compare options
  - Best course of action
- **Re-examine and Revise Conclusions**

Department Response to MCI's

- **Policies and Procedures**
  - Written response plans
  - Patient tracking and reporting
  - Triage System / tags
  - On-going Operations
  - National Incident Management System (NIMS) Training
- **Stress Awareness Training / CISD**
- **Communications**

START Triage

Target Values for Respiration, Perfusion, and Mental Status: "30-2-Can Do"

Minor

- Respirations 10 - 30 per minute.
- Capillary refill < 2 seconds or radial pulse present.
- Victim can do what you ask.

Immediate

Deviations from these criteria (unconsciousness, rapid breathing, delayed capillary refill, or absence of radial pulse) indicate serious injuries.

S.A.L.T. Mass Casualty Triage

Sort – Assess – Life Saving - Triage

- Proposed national standard by CDC (Centers for Disease Control and Prevention) with support from NHTSA (National Highway Transportation Safety Administration). 2007 White Paper
- Concept endorsed by American College of Emergency Physicians, American Trauma Society, National Association of EMS Physicians, National Disaster Life Support Consortium

  Disaster Medicine and Public Health Preparedness Dec 2008
- Not endorsed by NAEMT (National Association of Emergency Medical Technicians) March 2008 letter

Department Response to MCI's

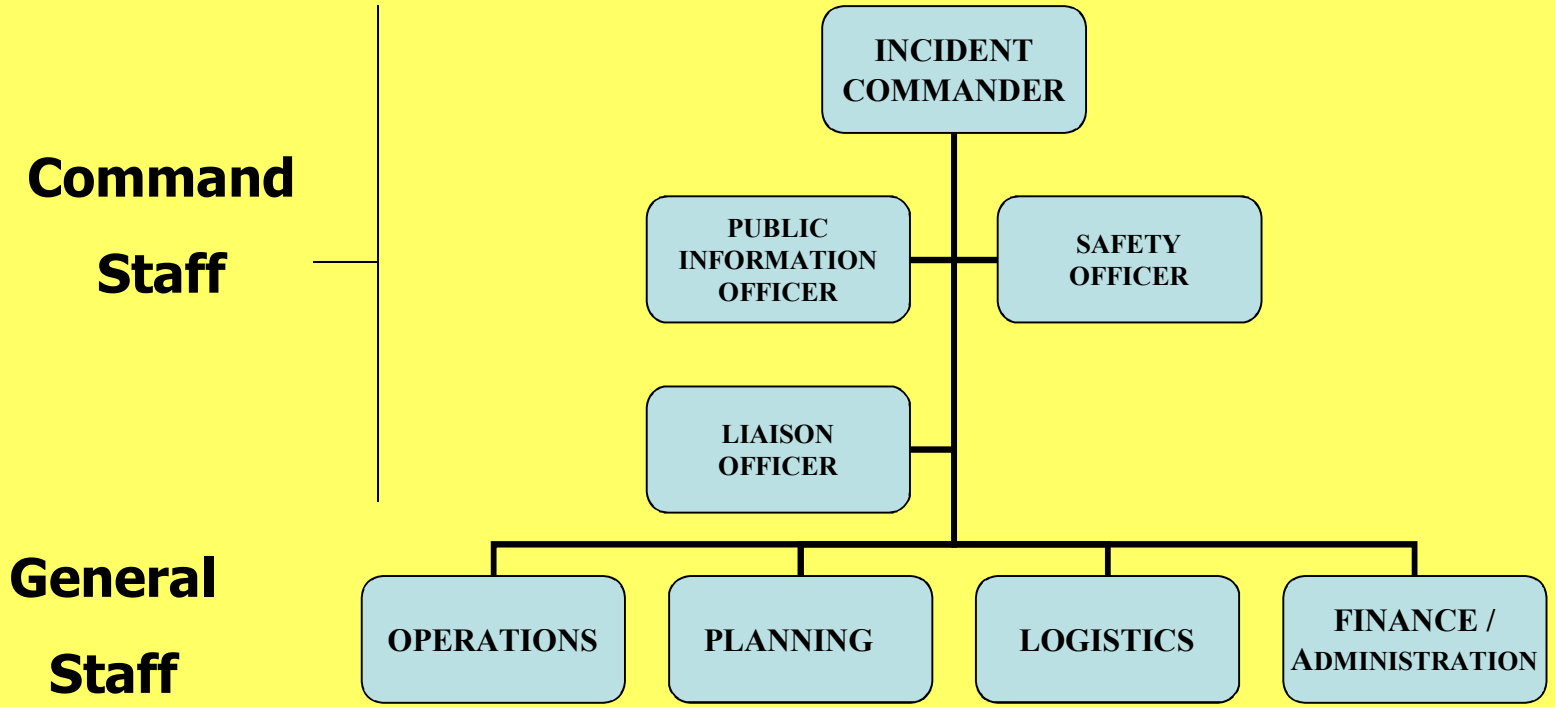
- Equipment
  - Personal Safety Equipment
  - MCI Vests
  - Supply vans, trailers, support vehicles
  - Specialty equipment
    - Extrication
    - Fast water
    - High angle
    - Wilderness
    - Collapse rescue

Balancing cost vs. practicality

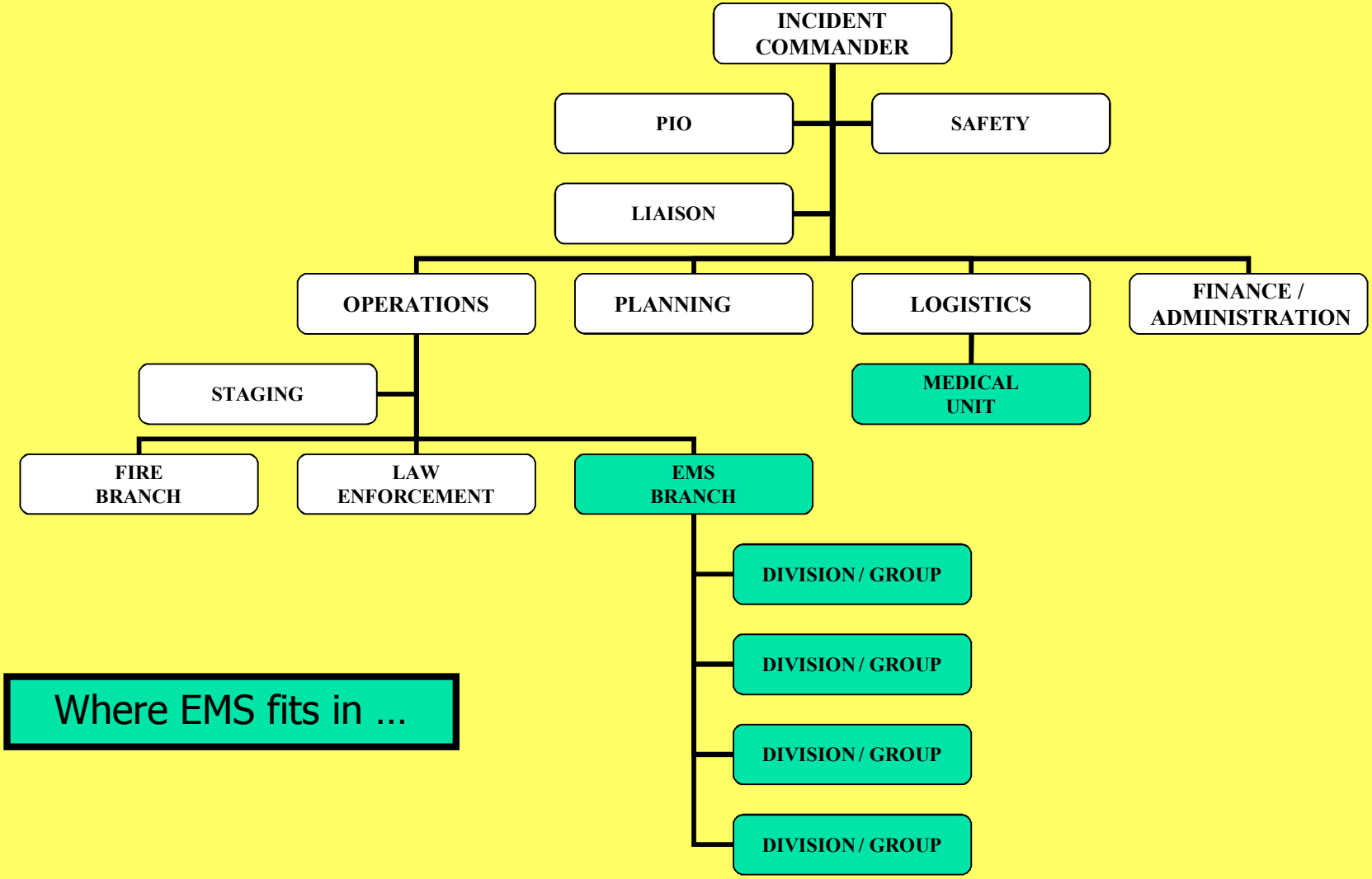
Department Response to MCI's

- Training
  - Hazmat, CBRNE, Decon
  - FEMA IS 700 - NIMS Intro
  - ICS 100- Intro to ICS System
  - ICS 200 – ICS for Single Resource / Initial Actions
  - Hospital Incident Command System (HICS)
- Exercises
  - Drills
  - Tabletops
  - Functional
  - Full Scale

ICS Basic Functional Structure



ICS Functional Structure



Where EMS fits in ...

System Response to MCI's

- Mutual Aid Agreements
  - Role of Regional Mutual Aid
- Hospital Compacts
- Regional planning
- Regional Disaster Exercises
  - Involve everyone who would participate
  - Businesses, volunteer agencies

System Response to MCI's

- State / Region / Nation
  - Strike Teams – intrastate and interstate
  - State Emergency Management Assistance Compacts (EMAC)
  - Incident Management Teams
  - National Disaster Medical System (NDMS)
  - Metropolitan Medical Response System (MMRS)

- National Response Framework (Homeland Security / FEMA): a systematic approach to manage incidents nationwide – includes NIMS and 15 Emergency Support Functions (ESF)
  - ESF#8: Public Health and Medical Services

Takes time, staff and agency commitment with little immediate payback.

Example: Regional EMS Plan

- History
  - 2002 west metro EMS Supervisors – 5 agencies
  - Single response plan that mimics daily operations
  - Follows national IMS standards / integrates with local and state plans
  - Approved by ALS Operations Committee
  - West Metro EMS Medical Directors
  - Metropolitan Emergency Services Board (MESB) establishes as regional response plan for 7 county metro region
  - Presented to MN EMS Regulatory Board (EMSRB) and state Medical Directors – plan is included in state BLS guidelines

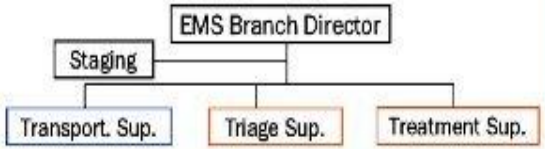
PROGRESSION OF THE EMS COMMAND STRUCTURE

Single Ambulance Response

- EMS Branch Director/Transportation Supervisor
  - Triage Supervisor

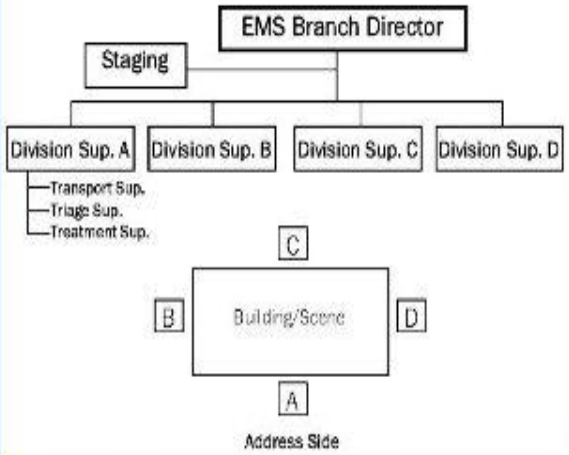
Multi-Unit Response

- Fill only those positions that are necessary to manage the incident.



Multi-Division Organization

- In large or widely scattered scenes, Divisions may be established to provide better control of the incident.
- A Division represents a geographic location. Division Supervisors may be identified by their geographic location.
- Divisions operate independently, Division Supervisors report to the EMS Branch Director.
- Requests for resources (vehicles, talkgroups, personnel, etc.) must be made through the EMS Branch Director.



ADDITIONAL GUIDELINES

COMMUNICATIONS:

- On scene, most communication should be done face to face. Only those in ICS Supervisor positions should be using radios and keep traffic short.
- Use Plain English, NO 10-codes.
- All responders will identify themselves using the following format: Dept Name, Type of Resource, and Radio #. This format will be known as Radio ID.
- Cell phone use is strongly discouraged.
- Resources assigned to an incident can only be reassigned or cancelled under the authority of the EMS Branch Director.
- EMS, hospitals and other agencies seeking scene updates should log-on to MNTrac, and not call MRCC or Communication Centers.
- Requests for additional talkgroups must be made to, and approved by, the EMS Branch Director who will coordinate with the controlling Communication Center.

OPERATIONAL CONSIDERATIONS:

- Ensure crews are wearing proper protective equipment.
- Ensure crews are wearing identification vests.
- Off-site Staging.
- MCI Trailer/additional supplies.
- Use of mutual-aid management staff.
- Buses for transport or shelter.
- Long term operations including relief/rehab for EMS staff.
- Need for volunteer agencies (Red Cross, Salvation Army, etc.).
- Demobilization.
- Psychological after-care.

Metro Region EMS

EMERGENCY MEDICAL SERVICES INCIDENT RESPONSE PLAN

GUIDELINES:

This plan is based on the principles and guidelines of the National Incident Management System (NIMS) and assumes responders have a working knowledge of the Incident Command System (ICS) and the positions it utilizes.

- The command structure presented in this plan may require expansion to meet the needs of larger or more complex incidents.
- Refer to agency specific guidelines for special incidents: HazMat, Police Tactical Operation, Fire Standby, Water Rescue, etc.

- The agency communication center will notify MRCC every time they use an ETAC talkgroup.
- **FIRST ARRIVING CREW:** *Refer to Panels A & B .*
- **2nd IN or LATE ARRIVING AMBULANCES:** Refer to Panel C.
- **Do NOT respond unless requested!**

HAZMAT RESPONSE

- Check temp., humidity, wind speed & direction.
- Identify safe access routes and staging areas.
- Ensure proper use of protective equipment.
- Consult with Incident Command to establish cold zones and decontamination process.
- Collection of patients in Cold Zone is preferred.
- Decontaminate patients prior to triage and transport.
- Contact MRCC/Medical Control of the potential for contaminated patients to self transport.

Revised: January 2008

A — EMS BRANCH DIRECTOR/TRANSPORTATION

(Report to Incident Command/form Unified Command)

- Upon arrival at the scene, the role of EMS Branch Director will be assumed by an individual and announced on the radio. (Example: "[name] will be EMS Branch Director.") Any change in the person filling the role must also be announced.
- The EMS Branch Director is responsible for all positions within the Incident Response Plan (IRP) until delegated.
- Radio discipline on scene is maintained by allowing only the EMS Branch Director to communicate with the Communication Center.
- To manage complex incidents, the EMS Branch Director may appoint staff to serve as Assistants.
- The EMS Branch Director must provide regular Situation Reports (Sitreps).

SCENE SIZE-UP

It is vital to communicate an accurate scene size-up so the appropriate resources can be started. It is better to start more resources and cancel them, than to have a delayed response.

The information should include:

- Type of Incident.
- Potential number of patients.
- Types of injuries.
- Severity of injuries.
- Give staging location.
- Best route in/out.
- Is on-call Medical Director needed?
- Do hospitals need to be alerted to the incident?

The communication center or MRCC may prompt the EMS Branch Director for information not given during the scene size-up.

TRANSPORTATION SUPERVISOR

(Report to EMS Branch Director or Division Supervisor)

- Requests for resources must be made to the EMS Branch Director.
- Coordinate the rapid loading of transporting vehicles.
- Track the number of patients transported by each vehicle.
- Keep entry/exit routes open.

B — TRIAGE SUPERVISOR

(Report to Transportation Supervisor)

- Triage supervisor maintains role of Treatment Supervisor unless it is delegated.
- Coordinate with Transportation Supervisor to expedite patient movement.

1. Provide EMS Branch Director with approximate number of patients
2. Identify, corral, and monitor "walking wounded".
3. Complete triage process, identifying critical patients.
4. Update EMS Branch Director with number of patients and acuity.

TRIAGE

GREEN

- **"Walking Wounded" or injuries treated by first-aid alone.**

YELLOW

- **Follows simple commands.**
- **Minor injuries but unable to ambulate.**

RED

- **Unable to follow simple commands.**
- **Respiratory Distress**
- **Signs of Shock**

TREATMENT SUPERVISOR

(Report to EMS Branch Director or Division Supervisor)

- Organize medical care in treatment area.
- Determine need for supplies and staff in treatment area.
- Provide for medical need of all "walking wounded."
- Direct First Responders when caring for multiple patients.

C — 2nd IN or LATE ARRIVING AMBULANCES

(Report to EMS Branch Director or designee)

Notification

1. Go to assigned radio tactical talkgroup.
2. Contact the Communication Center of the agency controlling the incident for instructions.
3. Approach scene using designated route to avoid hazards.
4. Upon arrival at assigned area, contact the EMS Branch Director, or Staging Supervisor if established.
5. All responders will identify themselves using the following format: Dept Name, Type of Resource, and Radio #.

At Staging

- Leave keys in ignition.
- Stay inside the vehicle until assigned a duty.
- Remember other vehicles, do not block entry/exit routes.

Loading Patients and Leaving the Scene

1. **Quickly load patients and provide treatment enroute!**
2. Notify EMS Branch Director, or Transportation Supervisor if established, of the number of patients being transported.
3. Immediately contact MRCC/Medical Control by radio on the MRCC talkgroup. Give radio ID, destination, age, gender, patient name, triage color, and chief complaint.
4. Contact your Communication Center and advise them of your status.
5. Before clearing hospital, crews must contact MRCC/Medical Control and give patient names and/or identification if not given previously.

STAGING SUPERVISOR

(Report to EMS Branch Director or designee)

- Establish staging area and keep entry/exit routes open.
- Respond to requests for resources from the EMS Branch Director or designee.
- Assign the appropriate resource to meet request.
- Provide requested resources with location of assignment, talkgroup, and any special instructions.
- Keep EMS Branch Director updated on resources in staging.

The REALLY BIG ONE

- Mass Casualty Incidents: overwhelm EMS and hospital capabilities of a locality, jurisdiction, or region.
  - World Trade Center
  - Hurricane Katrina
  - Earthquakes, tsunami
  - Pandemic - SARS
  - Ice storms, tornados
  - Terrorism – Tokyo Sarin gas attack
    - Madrid Train bombing
    - London subway, Mumbai Hotel
    - Oklahoma City

Minot, ND

The REALLY BIG ONE

- Homeland Security's expanded focus for EMS includes
  - All hazards approach
    - CBRNE: Chemical, biological, radiological, nuclear, explosive – conventional and nuclear
  - Decontamination
  - Chempacks, Strategic National Stockpile
  - Continuity of Operations Plan (COOP)
  - Pandemic Planning
  - Multi-Area Coordination (MAC)

National Preparedness: Strategic National Stockpile (SNS)

12 hr Push Pack

Chempack: EMS and Hospital

Chempack Contents

EMS Chempack is designed to treat ~ 450 casualties

(Originally designed to treat 1000 casualties)

Item	unit pack	cases	totals
Mark 1 auto-injector	240	5	1200
Atropine 0.4mg/ml 20ml	100 vials	1	100
Pralidoxime 1gm inj 20ml	276 vials	1	276
Atropen 0.5 mg auto-injector	144	1	144
Atropen 1 mg auto-injector	144	1	144
Diazepam 10 mg auto-injector	150	2	300
Diazepam 5 mg/ml 10ml vial	25	2	100
Sterile water 20ml vials	100 vials	2	200

Mark 1 auto-injector

Atropine autoinjector (2 mg in 0.7 cc's)
Pralidoxime chloride autoinjector - 2-PAM (600 mg in 2 cc's)

Summary

What makes a successful response to an MCI?

The things we control worked!

- Good information/communications
- Effective command and control of scene
- Cooperation and shared assumptions
- Patients managed well
- Adequate training and planning
- Crews well equipped

We worked through the things we don't control!

WE WERE READY!

Readiness for an MCI means:

- Being ready on three levels:
  - Individual
  - Department
  - System
- Thinking critically during the event
  - Identify / Define the Problem
  - Analyze Options
  - Re-examine / Revise Conclusions
- Having a plan in place
- Training / Practicing / Exercising
- Planning for National Challenges - locally / regionally

In conclusion …

Coordination is the key to an effective MCI response.

Preparation for what is “likely” to occur is best way to ensure a successful response to what is “unlikely” to happen.